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Language Learning Strategies: A Compilation of Research and Taxonomies

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Language Learning Strategies: A Compilation of Research and Taxonomies

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Language Learning Strategies: A Compilation of Research and Taxonomies

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Among learning characteristics for L2 learners, language learning strategies are one characteristic that has the potential of being influenced by language instruction. This report attempts to review the most salient research and taxonomies for LLS to provide a comprehensive overview for those who would like to teach, learn, or conduct more research in the field. It records various definitions that have been assigned to LLS and traces the history of LLS research that has accumulated over the past thirty years. It also reviews empirical research that has been conducted by applying certain taxonomies to find relationships between other learner characteristics. Finally, it looks into ways that LLS can be applied to the four language skills: reading, listening, speaking, and writing, and discusses research designed to analyze the effectiveness of Strategy Based Instruction for the specific skills. The concluding section finds particular avenues for further research and application of LLS.

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Introduction

As it has become clear in the past thirty years that individual responsibility for learning rests on the shoulders of the learners, researchers have gradually shifted from focusing on teaching methods to learner characteristics in the field of second language acquisition (Mokhtari, 2007). Learning characteristics include traits like age, sex, nationality, motivation, belief, and proficiency level and have an effect on performance in the L2. One learning characteristic of L2 learners that has the potential of malleability is the strategies they use to improve their L2 abilities. If the individual responsibility to learn the L2 rests on the shoulders of the learners, then strategies play a significant role in that endeavor. The purpose of this literature review is to consolidate taxonomies and collect empirical research conducted by researchers to provide a holistic understanding of the language learning strategies of L2 learners. The compilation will provide a comprehensive range of strategies in which language students can browse and potentially use to develop their strategy-use, aid teachers in determining which kind of strategy instruction is most effective, and facilitate future research. This review will explore the definitions of language learning strategies presented by different theoretical accounts. Then it will trace the history of general language learning strategy research, including the taxonomies created to develop a systematic organization of strategies. Moreover, it will examine and analyze studies that explore the relationship between LLS and other variables. Additionally it will discuss strategies specific to the four skills (reading, listening, speaking, and writing), empirical research which explores their relation to proficiency, and the effectiveness of pedagogic intervention with strategies. Finally, it will

provide concluding analysis by connecting ideas and suggesting possibilities for future research.

The Definition of Language Learning Strategies

Grenfell and Macaro (2007) admit that the definition and terminology of Language Learning Strategies is a problematic issue in Language Learning Strategies research. Since its inception in the 1970s LLS research has been subject to criticism by scholars who claim that there is a 'fuzziness' about how to define the term (Seliger 1983, R. Ellis 1986, Stevick 1990 as cited by Grenfell and Macaro 2007).

One such critic was Rod Ellis (1994). Creating his own systematic response to the problem, he redefined LLS based on a series of other researchers' work and addressed the problem of previous ambiguous definitions by writing a list of characteristics to specify its meaning. First, he defined a general language learning strategy as 'a mental or behavioral activity related to some specific stage in the overall process of language acquisition or language use.' Then he categorized language learning strategies by using Tarone's (1980) classification system of production, communication, and learning. Tarone defines production strategies as those strategies which involve using the language with minimum effort (ex. simplification, rehearsal, and discourse planning), while communication strategies involve dealing with problems of communication during interaction, and language learning strategies entail developing linguistic and sociolinguistic competence in the target language (ex. Memorization, conversation with native speakers, and inferencing). Tarone also distinguishes between language learning strategies and skill learning strategies: the first meaning the mastery of new information about the target language and the second meaning attempts to become skilled listeners, speakers, readers, or writers.

Moreover, Ellis records differing definitions of strategies by several scholars in the 80s. For example Stern (1983) claims that a language learning strategy 'is best reserved for general tendencies or overall characteristics of the approach employed by the language learner, leaving techniques as the term to refer to particular forms of observable learning behavior' while Weinstein and Mayer (1986) claim that language learning strategies 'are the behaviors and thoughts that a learner engages in during learning that are intended to influence the learner's encoding process.' Additionally, Chamot (1987) believes that language learning strategies are 'techniques, approaches, or deliberate actions that students take in order to facilitate the learning, recall of both linguistic and content area information,' and Rubin (1987) defines language learning strategies as that which contributes to 'the development of the language system which the learner constructs and affect learning directly.' Finally, Oxford (1989) considers language learning strategies to signify 'behaviors or actions which learners use to make language learning more successful, self-directed, and enjoyable.'

Ellis finds a number of problems in all these definitions. First, the definitions do not address whether LLS should be perceived as mental, behavioral or both. While Oxford only considers an LLS to be a behavior, Weinstien and Mayer believe it to be both behavior and thoughts. Also, Stern (1983) distinguishes between strategies and techniques, while other researchers use 'strategies' to refer to the kind of behavior Stern calls techniques. Moreover, these definitions do not distinguish between conscious and subconscious strategies. Chamot (1987) refers to strategies as 'deliberate' actions while Seliger (1984) differentiates between 'strategies' and 'tactics,' by determining that 'strategies' mean 'abstract categories of processing' and 'tactics' mean 'variable and idiosyncratic learning activities.' Ellis considers this distinction of subconscious strategies and conscious tactics to be helpful, though, he

recognizes that some researchers prefer to believe that what starts out as a conscious tactic becomes an unconscious strategy. Ellis prefers to consider conscious actions or what Seliger calls 'tactics' to be the learner strategies that he analyzes in his chapter. In order to provide his own definition of learning strategies, Ellis writes a list of characteristics that he considers to be consistent with the term learning strategy.

1. Strategies refer to both general approaches and specific actions or techniques used to learn an L2.
2. Strategies are problem-orientated—the learner deploys a strategy to overcome some particular learning problem.
3. Learners are generally aware of the strategies they use and can identify what they consist of if they are asked to pay attention to what they are doing/thinking.
4. Strategies involve linguistic behavior (such as requesting the name of an object) and non-linguistic (such as pointing at an object so as to be told its name).
5. Linguistic strategies can be performed in the L1 and the L2.
6. Some strategies are behavioral while others are mental. Thus some strategies are directly observable, while others are not.
7. In the main, strategies contribute indirectly to learning by providing learners with data about the L2 which they can then process. However, some strategies may also contribute directly (for example, memorization strategies directed at specific lexical items or grammatical rules)
8. Strategy use varies considerably as a result of both the kind of task the learner is engaged in and individual learner preferences. (Ellis 1994:533)

Ellis claims that language learning strategies can only effectively be studied in the declarative form, where the learner is involved in conscious activity (also known as the cognitive stage of learning (Andereson (1980)) and therefore, strategies can be defined as 'production sets that exist as declarative knowledge and are used to solve some learning problems.'

Although not mentioned in Ellis's analysis, Wenden (1991) also defines LLS in three ways. First, she claims that learner strategies refer to 'language learning behaviors learners actually engage in to learn and regulate the learning of a second language.' Second, LLS refers to 'what learners know about the strategies they use, i.e. their strategic knowledge.' LLS also refers to 'what learners know about aspects of their language learning other than the strategies they use, e.g. what personal factors facilitate L2 learning; general principles to follow to learn a second language successfully; what is easy or difficult about learning a specific language; how well or poorly they can use the language . It is assumed that this knowledge may influence a learner's choice of strategy.' Like Ellis, Wenden also admits the elusive nature of the term because of designations of different words that may or may not mean the same thing, such as 'technique' or 'tactics.' She addresses this problem as well as certain theoretical disputes by specifying the nature of strategies:

1. Strategies refer to *specific actions or techniques* (e.g. comparing TL rules with NL rules; repeating a phrase to remember it) not a learner's general approach.
2. Some actions will be *observable* and others *not observable*.
3. Strategies are *problem oriented*. Learners use them to address a learning need.
4. Strategies refer to both *direct learning* and *indirect learning*.

5. Sometimes strategies may be *consciously employed* while other times they can *become automatized*. (Wenden 1991: 7-8)

A more recent definition of LLS has been proposed by White (2008). She posits that:

> a general definition of language learning strategies is the operations or processes which are consciously selected and employed by the learner to learn the TL or facilitate a language task. Strategies offer a set of options from which learners consciously select in real time, taking into account changes occurring in the environment, in order to optimize their success in achieving their goals in learning and using the TL. As such the term strategy characterizes the relationship between intention and action, and is based on a view of learners as responsible agents who are aware of their needs, preferences, goals, and problems. (White 2008: 9)

Grenfell and Macaro address Ellis' and others' critiques by arguing that lack of consensus over definitions are not exclusive to LLS but indicative of the entire field of second language acquisition. They claim that a strategy is 'some form of activity that is used in response to problems when and where they arise. These problems might be found within the discourse, within the social context, or inside the head of the learner—or all three.' (10)

The History of Strategy Research

The birth of LLS research began in the 1970s with Joan Rubin's (1975) seminal study entitled, "What the Good Language Learner" Can Teach Us.' She listed the following approaches utilized by successful language learners:

I Processes which may contribute directly to learning:

1. Clarification and Verification
2. Monitoring
3. Memorization
4. Guessing/inductive reasoning
5. Deductive reasoning
6. Practice

II Processes which may contribute indirectly to learning:

1. Creates opportunities for practice
2. Production tasks related to communication

(Rubin 1975: 124-125)

Stern (1975) also created a list of the top-ten strategies of the good language learner.

1. A personal learning style or positive learning strategies.
2. An active approach to a task.
3. A tolerant and outgoing approach to the target language and empathy with its speakers.

4. Technical know-how about how to tackle a language.
5. Strategies of experimentation and planning with the object of developing the new language into an ordered system and/or revising this system progressively.
6. Constantly searching for meaning.
7. Willingness to practice.
8. Willingness to use language in real communication.
9. Self-monitoring and critical sensitivity to language use.
10. Developing the target language more and more as a separate reference system and learning to think in it. (Stern, 1975: 31)

These two approaches were devised from the personal experiences of the researchers who were also language teachers, they did catalyze more research in the field that eventually blossomed into more intricate theoretical and empirical studies. They also represent an early stage in the field where scholars attempted to catalogue "good" LLS.

Naiman et. al. (1979/1996) begged the question, could poor language learners benefit from knowing the good language learners' tricks? They reduced strategies into five categories: active task approach, realization of language as a system, realization of language as means of communication, management of affective demands, and monitoring of L2 performance. They also included a list of techniques that of what a learner might do to learn language in particular skill areas such as grammar, vocabulary, listening, writing, speaking, and reading.

O'Malley and Chamot (1990) attempted to ground LLS research within the general information processing model developed by Anderson (1983). Anderson distinguishes between three stages of learning: cognitive, where the learner is consciously acquiring

declarative knowledge, associative, where the learner is making connections, and automatic, where execution is automatized and unconscious. According to O'Malley and Chamot, strategies are conscious in the cognitive stage until they become proceduralized and unconscious in the automatic stage. Then using Anderson's model as a basis, O'Malley and Chamot (1990) made a further distinction among strategies, classifying them into three categories 1) metacognitive strategies used to plan, monitor, and evaluate language learning, 2) cognitive strategies referring to actual processing of the language in the brain, and 3) social strategies involving the social and affective aspects of or language learning.

Under the subset, metacognitive strategies, O'Malley and Chamot describe planning as the direction of future thoughts and behavior influenced by goal setting or input features that seem to be most appropriate for performing a task. They define selective attention as focusing on key words, phrases, or phrase boundaries that are intelligible to the listener. Finally, they describe monitoring as the response to the ambiguity of understanding where one selects the "best guess" of meaning based on available information.

O'Malley and Chamot's extensive list of strategy-like cognitive processes includes resourcing, repetition, grouping, deduction, imagery, organization, inferencing, elaboration, auditory representation, summarizing, recombination, translation, and transfer. Resourcing refers to using reference materials, repetition implies silent rehearsal, grouping means classifying words according to attributes or meaning. Images are one way that information is stored in memory, and O'Malley and Chamot suggest that verbal-imagery linkages may be useful in learning vocabulary, though less useful for finding meaning in authentic texts. Organization can be associated with grouping or chunking information into words or phrases

while focusing on either linguistic characteristics or meaning-related aspects and building connections between related ideas. O'Malley and Chamot indicate that inferencing plays a role in recall, with prior knowledge especially contributing to comprehension. Elaboration refers to the enhancing of memory by increasing the number of related ideas that are present at the time of study or recall. In the process of transferring strategies, a learner recognizes similarities between new tasks and tasks involved in former strategy applications. Auditory representation involves playing back sounds in one's mind, summarizing entails making a summary, recombination requires constructing a meaningful sentence by combining known elements in a new way, and translation refers to using the first language as a base for understanding/producing the second language.

Under the subset of social/affective strategies, cooperation, questioning, and self-talk are the strategies classified. Cooperation involves working with peers to solve problems, questioning refers to eliciting an additional explanation, rephrasing, or examples, and self-talk is mental coaching to ensure a learning activity will be successful.

Oxford (1990) also provided a classification system for LLS. She divided them into two categories: indirect and direct, the former meaning managed learning without involving language, and the latter referring to direct manipulation of the target language. Under those subsets, she classified memory, cognitive, and compensatory strategies with direct strategies, and metacognitive, affective, and social strategies under indirect strategies. She then listed individual strategies that fall under those categories.

The first group of strategies are direct strategies. Under the memory category, she suggests that students create mental linkages by grouping, associating, and placing new words into context. She also advises applying images and sounds by using imagery, semantic mapping, keywords, and representing sounds in memory. Next, she recommends reviewing through structured reviewing. Finally, she suggests employing action by using physical response or mechanical techniques.

Under the cognitive category, she lists practicing, receiving and sending messages, analyzing and reasoning, and creating structure for input and output. Practicing involves repeating by either listening or rehearsing, practicing with sounds and writing systems, being aware of and using formulas and patterns like "It's time to….," recombining by linking one phrase with another, and practicing naturalistically, like participating in a conversation or reading a book. Two strategies for sending and receiving messages are skimming and scanning to get the main idea of the message, and using resources like dictionaries to understand incoming messages or produce outgoing messages. Analyzing and reasoning consists of deductive reasoning, or applying general rules to target language situations, analyzing expressions by breaking them down into parts, analyzing contrastively by comparing the new language to the old language, translating either from target to native or native to target, and transferring, or applying knowledge from one language to another. The three strategies she suggests for creating structure and input are taking notes, summarizing, and highlighting.

Under the category compensation strategies, there are two subsets: guessing intelligently in listening and reading, and overcoming limitations in speaking and writing. Students can use linguistic clues from either the target language or another language, or non-

linguistic clues such as context, situation, text structure, personal relationships, etc. Oxford lists eight strategies for overcoming limitations in speaking and writing. They include switching to the mother tongue without translating, getting help by hesitating or asking a person to provide the missing expression in the target language, using gestures in place of the expression, avoiding communication when difficulties are anticipated, such as avoiding certain topics or certain expressions, selecting the topic of discussion to make sure it is one in which the learner is equipped to discuss, approximating the message by omitting some items of information, or saying something slightly different that means the same thing, coining words to communicate a desired idea, and using circumlocution or a synonym to describe the unknown concept.

Under indirect strategies Oxford lists a group of metacognitive strategies that provide learners a way to coordinate their own learning. Centering learning entails the overviewing and linking with already known material, paying attention in general or to specific aspects by avoiding distracters, and delaying speech to focus on listening. Arranging and planning learning involves finding out about language learning, organizing conditions optimal to language learning, setting goals and objectives, identifying the purpose of a language task, planning for a language task, and seeking practice opportunities. Evaluation of learning is comprised of self-monitoring by tracking errors and trying to eliminate them, and self-evaluating by tracking one's own progress.

Then she defines affective strategies used to alleviate anxiety, to foster self encouragement, and taking emotional temperature. Anxiety reducing strategies are relaxation techniques, using music, or using laughter. Self-encourage techniques include making positive

statements to oneself, taking risks wisely when in language learning situation, and rewarding oneself for good performance. Four strategies for taking emotional temperature are listening to your body, using a checklist concerning feelings towards specific tasks, writing a language learning diary, and discussing your feelings with someone else.

Finally, Oxford describes social strategies which consist of asking questions, cooperating with others, and empathizing with others. Asking questions includes asking for clarification and asking for correction, cooperation consists of cooperating with peers and cooperating with proficient users of the language, and empathizing with others involves developing cultural understanding and becoming aware of others' thoughts and feelings. This taxonomy was used to construct the *Strategy Inventory for Language Learning* (SILL), a survey given to language learners to find out which types of Oxford's strategies they use more frequently.

Oxford and Cohen (1992) addressed some of the criticism by Ellis (1986) by acknowledging that there was little clarity as to what constituted a conscious strategy versus an unconscious strategy. Therefore, they decided to propose that all strategies be regarded as conscious, and argued that the highest learning performance was associated with congruent packages of strategies and learning styles. They also recognized that there was a fuzzy ambiguity of the meaning of the term strategy, but they decided to reject classifications of 'strategies' and 'tactics' because it would produce a strategy list that would become overly long and atheoretical.

LoCastro (1994) criticizes the SILL by saying that more ethnographic research should be conducted to be sensitive to motivational and environmental factors that affect students. She believes such research should precede any creation of a quantitative instrument like the SILL. She came to this conclusion by citing examples outside mainstream school or university settings and suggested that these may be different than classroom learning. She also claims that LLS developed by learners under grammar translation method might not be the same as LLS developed in a communicative classroom. In other words, strategy use might be influenced by the learning environment. She also found that students in a study conducted in Japan found the SILL to be inappropriate. In class discussions participants pointed out that one shortcoming of the SILL was the lack of counting listening as a strategy as a means to learn. They also criticized the lack of contextualization of some items like, "I start conversations in English," which only two people answered yes, and the others said it would depend on the situation. This suggests that students may only use a strategy depending on the situation in which they found themselves or contextual cultural norms.

Other critics of LLS emerged as well. Rees-Miller (1993) claimed that there was no empirical evidence to support the contention that strategy awareness was causal in successful L2 learning. She also suggested that strategies could not necessarily be easily transferred from one person to another, and she doubted that teachers could easily observe strategies being employed by students. Finally, she cited Porte (1988) and Vann and Abraham (1990) who found poor language learners to be strategy users with little success. Chamot and Rubin (1994) countered Vann and Abraham's claim by stating that using a variety of strategies was useful for all learners and effectiveness of strategy training was already proven in some of the literature. However, Rees-Miller's claim that causality had not been proven remained (1994).

Sparks and Granshow (1993) argued that teaching LLS to lower performing students was counterproductive because it condemned them as poor strategy users. They proposed something more fine grained to remedy low achievement such as examining the connection between poor phonological recognition and poor reading skills.

Despite criticism, strategy researchers continued to pursue their research agenda and refine their claims. They stressed the importance of focusing SLA research on the individual learner. Cohen (1998:21) argued that teaching LLS took the responsibility off the shoulders of the teachers and onto those of the learner. Grenfell and Harris (1999: 50) claim LLS puts emphasis on the learner by teaching them how to learn.

Although researchers persisted in believing that LLS was a legitimate learner characteristic, they did recognize that strategy-use might be contingent upon the learning environment. They also shifted from a 'good' 'bad' learner perspective to an examination of the individual's strategic reaction to a specific learning context. They additionally abandoned interest in the quantity of strategies used to focus more on quality (Grenfell and Macaro, 2007: 23). Macaro (2001) proposed that more skillful language learners employ more metacognitive strategies than less skillful learners. Chamot and El-Dinary (1999) also proposed that skillful learners would monitor and modify their strategy use while poor learners would continue to use ineffective strategies.

From the 1990s to the present strategies researchers have claimed the following about LLS: First, strategies could continue to be considered under broad categories. Second, strategies research shifted from teaching to the individual learner. Third, the learning context had a significant impact on strategy use. Fourth, strategies were value neutral and could be

used either effectively or ineffectively. Fifth, strategy research continued to be a valuable endeavor that could explain more about the process of language learning. Finally, that strategy use and achievement are inextricably related (Grenfell and Macaro, 2007: 24).

In the 1990s, there was a trend of self-regulation research, causing a "virtual explosion of work" in the area (Zeidner, Boekaerts, & Pintrich 2000, p. 750 as cited by Dörnyei). Dörnyei (2005) defines self-regulation as the degree to which individuals are active participants in their own learning; it is a more dynamic concept than learning strategy, highlighting the learners' own "strategic efforts to manage their own achievement through specific beliefs and processes" (Zimmerman & Risemberg, 1997: p. 105 as cited by Dörnyei). According to White (1995), self-instructional contexts necessitate learner autonomy which requires the learner to have an attitude that takes control of and assumes responsibility for the language learning process.

The most recent critics of strategies research are Zoltán Dörnyei and Peter Skehan (2003). They argue that a strategy cannot be cognitive, emotional, and behavioral at the same time. They also don't believe that a strategy can contribute to both linguistic knowledge and language skills. Dörnyei (2005) asks whether LLS actually exist as a psychological construct considering the ambiguity of the concept. He finds the most profound problem to be that the literature cannot distinguish between an ordinary learning activity and a strategic learning activity. Secondarily, he is in agreement with Ellis (1994) in that he considers the taxonomies of LLS to be ad hoc and miscellaneous. Finally, he finds the SILL to be flawed because the items attempt to reveal specific behaviors instead of tapping into a general trend. While he criticizes strategies research, he supports strategies pedagogy with the stance that while the

effectiveness of strategy use can't be proven, teaching strategies cannot do any harm. Grenfell and Macaro (2007) criticize Dörnyei for treating thirty years of research from different practitioners as if all the studies were conducted by one research team instead of acknowledging what Cohen and Macaro (2007: 26) consider to be tension in the 'community of practice.'

More recent work has focused on matching strategies to specific tasks. Grenfell and Macaro (2007) believe that future research will be built upon the need to methodically match strategies with tasks and the careful investigation of learners' cognitive responses to task demands. They also note a growing consensus that the level of strategy use sophistication lies in the metacognition of combinations of strategies geared toward a particular task. Finally, they recognize the problem of linking strategy use with achievement.

Individual Variables, Proficiency and the Learning Situation

Since the birth of LLS research, there have been numerous empirical studies that have investigated the relationship between LLS and variables such as age, gender, motivation, career orientation, personality types, and nationality. There have also been studies that have examined the relationship between strategy use and proficiency (Takeuchi, Griffiths, and Coyle 2007). Finally, there have been studies dealing with situational variables and their effect on strategy use. The following is a brief literature review of these studies.

According to Takeuchi, Griffiths, and Coyle, only a few studies have investigated the effects of age on strategy use. The first was a study by Griffiths (2003) which quantitatively analyzed the impact of age, course level, nationality, and gender on strategy use with 348 students age 14 to 64. While she found that neither age nor gender were related with strategy use, she did find differences in nationality. Peacock and Ho (2003) however, found that age affected strategy use. In their empirical study, they discovered that older students used four out the six strategy groupings in the SILL more than younger students. Students, age 23-39 (n=112) used memory, metacognitive, social, and affective strategies more than students age 18-22 (n=894). Victori and Tragant (2003) studied age groups of 10, 14 and 17 year olds (n=766) and found that the older two groups used a significantly higher number of cognitively complex strategies than the younger learners while the younger learners used more social strategies. The first study was conducted in New Zealand, the second in Hong Kong, and the third in Spain, therefore the context may explain the differences in results. Also, the age groups were markedly different in the studies. Peacock and Ho's (2003) young group was

older than Victory and Tragant's (2003) oldest group, making Peacock and Ho's study difficult to compare.

On the role of gender, Politzer (1983) found that female college students used social/interactional strategies more than their male classmates. Additionally, Ehrman and Oxford (1989) found that females used four strategy categories (general learning, functional, searching for/communicating meaning, and self-management) more frequently than males. Oxford and Nyikos (1989) examined 1200 US college students and found that females used a greater number of formal practice, general study, and input elicitation strategies. Finally, in a South African study, Dryer and Oxford (1996) examined 176 females and 129 males and found that females more frequently used social and metacognitive strategies than males. In a larger scale study, Peacock and Ho (2003) tested 1006 Chinese EFL students (51 percent were male and 49 were female) and found that females reported a significantly higher rate of use of all six strategy categories in the SILL than males. However, there was conflicting evidence found by researchers in other studies. Hashim and Sahil (1994) reported that except for affective strategies, no difference was found between the sexes in the SILL categories. Wharton (2000) reported that among 678 students in Singapore learning French and Japanese, men used significantly more strategies than women. Griffiths (2003) in a New Zealand study and Nisbet, Tindall, Arroyo (2005) in a Chinese study also found no significant difference between male and female use of SILL strategies. Nisbett *et. al.* concluded that the discrepancy can be attributed to the effect of the culture context of the conflicting studies.

There is a consensus among researchers that there is a relationship between motivation and strategy use but there is yet to prove causality in either direction. Oxford and

Nyikos (1989) found that highly motivated US college students used four out of five of the strategy categories more frequently than did less motivated learners. Okada, Oxford, and Abo (1996) reported that there was a strong relationship between metacognitive, cognitive, and social strategy use and several motivational aspects in two groups of 36 Japanese learners and 36 Spanish learners. Wharton (2000) also found that Asian university students with high motivation used strategies more frequently than students with low motivation in all six categories of the SILL.

A relationship between career orientation and language learning strategy use was first pointed out in a study of 26 engineering students and 10 humanities majors by Politzer and McGroarty (1986) who reported that humanities majors used greater individual study strategies than engineering students. Oxford and Nyikos (1989) found in a study of 1200 US college students that humanities majors used functional practice strategies and independent strategies more frequently than technology majors. In a Japanese study of 44 English majors and 113 non-Englsh majors, Mochizuki (1999) found that English majors utilized compensation strategies, social strategies, and metacognitive strategies more often than non-English majors. Finally, Peacock and Ho (2003) discovered in their Hong Kong study that English majors reported a higher use of cognitive, metacognitive, and social strategies than did non-English majors and computer studies students reported a much lower use of metacognitive strategies.

There were a few studies which reported a relationship between the Meyer's Brigg's Personality test and LLS. Ehrman and Oxford (1989) found that extroverts used more affective and visualization strategies than introverts while introverts used more strategies for searching for/communication of meaning. They also reported that intuitive people used more affective,

formal model building, and searching for/communicating meaning strategy categories than did sensing people, and feeling people showed a greater use of general strategies than thinking people. Ehrman and Oxford (1990) in a study with 20 adults learning Turkish in the US, found that extroverts used social strategies and functional practice strategies while introverts preferred to study alone. In another study with 520 participants, Ehrman and Oxford (1995) found that overall strategy use was related to extroversion. Wakamoto (2000) conducted a study with 254 Japanese students and also found a relationship between extroversion and social practice and functional strategies while introversion did not correlate with any preferred use of the SILL strategies.

There were more studies which investigated the relationship of nationality and LLS. Politzer and McGroarty (1985) found that Hispanic students were likely to use strategies more frequently than their Asian counterparts. In terms of progress, however, Asians made more than Hispanics. Bedell and Oxford (1996) reported in a study with 353 mainland Chinese EFL students that compensation strategies were used the most. In contrast, Puerto Rican and Egyptian students reported only using a moderate amount of compensation strategies leading researchers to conclude that compensation strategies are more typical among Asian students. Contrary to popular belief, memory strategies were ranked low on their strategy categories. This was confirmed by Mochizuki (1999) in a study with Japanese students. Grainger (1997) examined students of different ethnic backgrounds learning Japanese and found that there were no significant differences in overall SILL scores when comparing Western students and their Asian counterparts. However, Grainger found that Asian learners were better at controlling their affective state, making them remember and compensate more. Finally,

Griffiths (2003) found that European students used SILL strategies more frequently than students from any other background.

Researchers have also attempted to determine the relationship between strategy use and proficiency. Bialystok and Fröhlich (1978) reported that the combined use of practicing, inferencing, and monitoring was responsible for 157 high school French students' achievement in listening, reading, and grammar. Takeuchi (1993) conducted a study with 78 Japanese college English majors and found that 60 percent of the variance of the Comprehensive English Language Test (CELT) had a relationship with strategy use on the SILL. Dreyer and Oxford (1996) in a study of ESL learners in South Africa concluded that 45 percent of the variance in the TOEFL was associated with the SILL strategies. Also found was a correlation of .73 between English proficiency scores and strategy use. Park (1997) reported a linear relationship between SILL strategy use and English proficiency in a study with 332 Korean University students. He also found that cognitive and social strategies were more predictive of TOEFL scores than other strategies.

On the other hand, some studies have not found correlations between strategy use and proficiency. In a study by Politzer and McGroarty (1985) there was only a weak correlation between improvement on tests testing communicative ability and strategy use. Similarly, Oxford and Ehrman (1995) reported low correlations between SILL strategies and proficiency ratings in an intensive foreign language program in the US. Mullins (1992) conducted a study with university students in Thailand and concluded that there were few significant relationships between strategies and three proficiency indicators: entrance examination scores, placement test scores, and GPA. In China, Nisbett *et. al.* (2005) found only

metacognitive strategies to correlate with TOEFL scores, and strategies only accounted for a variance of 4 percent.

Researchers have made several suggestions to account for the difference in results. Scarcella and Oxford (1992) suggest that other variables may have overshadowed strategy use; for example, 'tolerance of ambiguity, risk taking, self-esteem, field dependence/independence and motivation.' Another possible explanation proposed by Nisbett *et. al* (2005) is that the type of instrument chosen to indicate proficiency levels may not correlate well with SILL strategies because of its design. For example, the TOEFL tests cognitive and academic language proficiency, but may not asses as much communicative skills. Also, learners may have used strategies not written in the SILL.

Some studies have found that situational variables exert considerable influence on strategy use, or at least confound the association between individual variables and strategy use. For example, Ikeda and Takeuchi (2000) explored the relationship between the situation variable of task difficulty on the reported frequency of strategy use with a group of 192 university level EFL learners in Japan. Oxford, Cho, Leung, and Kim (2004) replicated and expanded Ikeda's and Takeuchi's study by finding that task-based strategy assessment was useful because it allowed for more contextualized analysis of strategy use. They also argued that non-task based strategy questionnaires in conjunction with task-based strategy assessment are also useful for finding 'typical' strategy use of individuals. Several studies reported differences in strategy use by ESL learners versus EFL learners. Riley and Harsch (1999) found that 28 Japanese students studying English in Japan used different strategies than 28 Japanese students in Hawaii. Recent researchers (Donato and McCormick 1994;

Lantolf and Appel 1994; Norton and Toohey 2001; Gao 2006) influenced by Vygotsky and others, have claimed that learning strategies development is highly influenced by the social context in which they occur. According to Wenger (1998) tasks and understandings do not function in isolation but are rather built upon complex relationships within specific situational contexts. This type of examination extends beyond the individual learner and permeates the interactions in the classroom.

Strategies for the Four Language Skills

Recently, researchers have begun to explore the relationships between LLS and specific language skills. The following is a review of the relationship between LLS and reading, listening, speaking, and writing in the L2.

Reading

Although it is difficult to define reading, two models of reading emerged to attempt to solve the problem. The first is a top-down approach (Goodman 1967) characterized by higher-level processes such as interpreting meaning from a whole-text level and accessing background knowledge in order to understand text. The second is a bottom-up approach (Smith 1978/1986) which includes lower level processes such as identifying and basing understanding on the word or phrase level. In the 1970s and 80s, *an interactive* model of reading combined top-down and bottom-up approaches (Rumelhard1977; Stanovich 1980). Since the 1990s, this interactive model has been increasingly accepted; however, top-down and bottom-up approaches continue to be useful for conceptualizing strategies research.

Commonly cited L2 reading strategies include skimming, scanning, identifying cognates or word families, guessing, reading for meaning, predicting, questioning, rereading words, sentences or entire passages, activating general or background knowledge, making inferences, following inferences, following references, separating main ideas from detail, and summarizing (Barnett, 1989; Brantmeyer, 2002). Using a questionnaire, Saricoban (2002) reported that successful readers participated in predicting and guessing, access in background knowledge related to the text's topic, guessed the meaning of unknown words, reread the entire passage,

identified main ideas, and monitored comprehension. Ahmad and Asraf (2004) offer five reading comprehension strategies that should be taught to L2 readers that could apply to any reading environment: 'determining importance, summarizing information, drawing inferences, generating questions, and monitoring comprehension.' Gascoigne (2008) stresses the importance of using global strategies such as 'activation of background knowledge, paying attention to meaning, hypothesizing, making predictions based on titles or images, skipping or engaging in contextual guessing when faced with unknown vocabulary, selecting texts in which one is interested, with which one is generally familiar, or about which one is motivated to read.' (Brantmeier, 2002; Horning, 2003; Konishi, 2003; Walz, 2001 as cited by Gascoigne).

The first set of studies focuses on strategy types and their relationship with reading proficiency. Hosenfeld (1976) published a descriptive study of strategy use by 14-year old learners of French by using think-aloud self-reports based on an unstructured interview format and reporting strategies that the learners were using. This study led her to conceptualize L2 reading strategies on two levels: one for 'main meaning' and the other for 'word level.' The following year, she described a coding system which she developed to discover strategies of successful and unsuccessful students of Spanish, French and German. She gathered information from the 20 highest scorers and the 20 lowest scorers of the MLA-Co-operative Test of Reading Proficiency discovered the following information regarding their strategy-use. Successful FL readers primarily used 'main meaning' strategies such as keeping meaning and context in mind, reading or translating broad phrases, skipping unknown words or inferring meanings from the surrounding text, ignoring words if they failed to establish a meaning, looking up words as a last resort if more efficient strategies had failed, and succeeding in

following through with a proposed solution to a reading comprehension problem. Less successful readers lost track of main meaning. They read or translated in short phrases, lost the meanings of words, phrases, or sentences soon after they had 'decoded' what their meaning was, and seldom skipped words 'as equal in terms of their contributing to total phrase meaning (p. 120 as cited by Earler and Finkbeiner).

Hosenfeld's work led to more researchers' attempts to classify and report strategy use with think-aloud tasks, the concept of higher and lower-level strategies, and proficiency tests to divide participants into more and less successful groups. For example, Block (1986) found that more successful readers used more 'general' strategies which included the integration of their comprehension of the text with information they discovered about the text structure. Carrell (1985) reported that low-proficiency students used more text-based strategies. Sarig (1987), however, concluded in her study that there were many possible, co-occurring variables that were due to individual differences and contributed to the choice and combinations of strategies. In other words, strategies could not be associated with proficiency in L2 reading or to individual readers in a simple manner. Parry (1991, 1993) for instance, found that individual reader's preference for one or the other type of strategy was driven by cultural and L1 backgrounds. Abraham and Vann (1987) found that personality type seemed to have a stronger effect on readers' predilection for 'top-down' or 'bottom up' strategies. Anderson (1991) proposed a more complex conceptualization of strategies linked to reading processing by eliciting strategy use from university students during two reading tasks: text reading and test taking. Anderson found that his better readers used more but not different strategies than did the less successful readers. Moreover, successful readers were better at monitoring

the success of strategies. Monitoring was considered to be the underlying component of metacognitive strategies. By the end of the 1990s, successful comprehension was linked to metacognitive strategies which involved the monitoring of cognitive strategies including 'bottom up' strategies.

The second group of studies is comprised of literature dealing with the impact of the L1 on strategy use at various levels of L2 reading processing. The literature discussed in this section attempts to investigate the possible transfer of L1 strategies to L2 reading strategies and the actual use of the L1 as a strategy in L2 reading (Erler and Feinkbeiner, 2007).

Different strategies have been shown to be required for word-level processing when languages differ in representational units. Koda (1991), in a study with L1 speakers of Arabic, Spanish, and Japanese, found that when given an English reading with some words replaced with Sanskrit, Japanese ESL students achieved better reading comprehension and faster reading rates than the other two groups. Koda's explanation for this result is that the other two groups had alphabetic or syllabary representations in their L1, making the L1 strategy of decoding graphemes to morphemes difficult to transfer to the L2 , while the Japanese could transfer their attention away from phonology as they did with their L1 orthography. Transparency, or how regular the system of spellings corresponds to the sounds of words, can also cause interference in strategy-use. Frost, Katz, and Bentin (1987) found that relative opaqueness (e.g. Hebrew and English) required more direct lexical access while more transparency (e.g. Serbo-Croation) only required phonological recoding.

Bi-literacy on reading strategy use was investigated by Jimenez et al. (1996) who found that among eight age 12 to 13 latino L2 readers, successful readers made use of specific strategies across languages such as looking for and evaluating cognates, evaluating comprehension on the premise that reading must make sense, and re-reading and questioning. Hardin (2001) looked at think-aloud data for fifty 9 to 10 year old Spanish L1 English learners and proposed a cross-linguistic taxonomy which included: thinking in the language of text, translating, transferring prior knowledge, and using cognates to access meanings. Hardin found that second language proficiency was less important than the level of strategy use in the L1 and concluded that strategic reading behaviors in L1 predicted strategic reading behaviors of L2.

The last set of studies investigated the effectiveness of reading strategy instruction with the goal of improving reading comprehension of learners. Reading comprehension has been measured various ways increasing the difficulty of comparing studies. Kusiak (2001) investigated how metacognition and comprehension are related by instructing Polish ESL students in metacognitive knowledge and monitoring strategies and testing them to determine their improvement. Kusiak found that their evaluation strategies improved as did their L2 reading comprehension. Especially positive results were found for lower-level proficiency students. Raymond (1993) taught students to identify text genre, structure, and content through linguistic text markers. Results revealed that students reported greater strategy-use, but only improved on one of two post-tests. A complex Strategy Based Instruction program was carried out by Dreyer and Nel (2003) in which strategy use development was attempted by study guides, an online data management and reference

program, and personal contact with tutors. Over a 13 week semester, 131 Afrikaans and Setswanan L1 students were taught cognitive and metacognitive strategies. By the end of the program, both successful and at-risk students achieved significantly higher comprehension scores than the control group. To develop understanding of the effectiveness of strategies instruction, Grabe (2004) has called for further SBI research at all levels of L2 reading with many different L2 languages, readers, and settings.

Listening

According to Rigney (1978), "listening strategies are deliberate procedures used to enhance comprehension, learning, and retention of the target language." Vandergrift (1997) used a think-aloud protocol to find specific strategy use when listening. The following are the strategies that students reported. Under metacognitive strategies, students used three types of planning: advance organization, direct attention and selective attention. These entailed predicting the teacher's questions, focusing by avoiding distracters, and identifying important keywords to process meaning. They also used two types of monitoring: comprehension and double check. These involved verifying one's understanding and re-listening to gain insight about previously misunderstood information. Evaluation included performance evaluation, strategy evaluation, and problem solving. Performance evaluation refers to judging one's completion of task, strategy evaluation refers to judging one's strategy use, and problem solving refers to applying a strategy to a problem that hinders understanding. Under cognitive strategies, five types of inferencing were recorded. The first was linguistic inferencing or using known words to guess the meanings of unknown words, the second voice or paralinguistic inferencing or using tone of voice to guess unknown words, the third kinesthetic inferencing or using body language to guess unknown words, the fourth extralinguistic inferencing or using relationships or situational referents to guess unknown words, and the fifth was between parts inferencing or using information beyond the local level to guess meaning. Elaboration refers to using prior knowledge from outside of the text to guess meaning. This included using personal, world, and academic experience to infer meaning as well as asking questions to

brainstorm possible interpretations of the text. The final list of categories was comprised of imagery, summarization, translation, transfer, repetition, and note taking.

Goh (1998) has reported differences in strategy use in a study where 16 students were selected from a group of 80 to form two groups with higher and lower listening ability. She found that lower level students used fewer strategies than higher ability students. The higher ability group used "contextualization: placing a key word in a familiar context to understand it, or relating an item to something from an earlier part of the passage", "real-time assessment of input: assessing how important a word or phrase is to the understanding of the passage", and "comprehension evaluation: determining the accuracy of completeness of comprehension."

In more recent study, Vandergrift (2003) discovered that skilled listeners used about twice as many metacognitive strategies as their less-skilled counterparts. He also found that more skilled listeners used an effective combination of both cognitive and metacognitive strategies. Vandergrift (2003) also investigated the effect of listening instruction on metacognitive awareness and listening comprehension. Before and during the listening task, students engaged in prediction, problem solving, monitoring, and evaluation. Students found it motivating to learn with authentic texts, and had an overwhelmingly positive response to this approach. They particularly noted the power of predictions for selective attention to the text, the importance of collaboration with a partner, and the confidence building role of this approach. The researchers noted that the weaker learners tended to benefit more from this type of instruction.

In response to the challenge that word segmentation poses to L2 speakers, Hulstijn (2003) suggests using the following list of strategies to help with word segmentation skills: 1. Listen to the recording 2. Ask yourself if you have understood 3. Replay the recording as often as necessary 4. Consult the written text to read what you have just heard 5. Recognize what you should have understood 6. Replay the recording as often as necessary to understand what you have not understood.

Several studies were conducted to measure the effectiveness of strategies training on listening comprehension. Thomson and Rubin (1996) conducted a study with two groups of third year Russian learners. The instruction lasted a year. The metacognitive strategies examined were "planning, defining goals, monitoring, and evaluating." The cognitive strategies included "predicting content, listening to familiar words and cognates, listening for redundancy listening tone of voice and intonation, and resourcing." The researchers found that the intervention group (n=24) made significantly higher gains than the control group (n=12) on the video test, but the gains were less positive on an audio test.

Seo (2000) investigated the effectiveness of listening strategies on ten university level students of Japanese in Australia over 19 weeks. Three strategies were selected for instruction: "identifying key terms, inferencing, and elaboration." There was a control group who received no instruction and an intervention group that received Strategy Based Instruction. Near the end of the training, both groups received eight weekly tests. The intervention group overtook the control group on performance of the last two weekly tests. Interestingly, learners appeared to learn more from bottom-up strategies. However, Ozeki (2000) compared two groups of Japanese EFL learners, teaching the intervention group a

variety of socio-affective, metacognitive, and cognitive strategies, and found that the intervention did not appear to be successful.

Kohler (2002) tested the effect of metacognitive training on 70 lower achieving Spanish learners by instructing them to determine "task related goals, identifying what strategies they might use, assessing how well strategies might be working, and selecting alternative strategies." This was not entirely a listening comprehension study, though listening was a component. This study found that listening comprehension improved and vocabulary knowledge significantly increased, though there does not appear to be a pre-test.

Few studies have been conducted to find out the effects of strategy training for listening comprehension, and none of the studies above showed an unequivocal benefit for students receiving instruction against a comparison group. However, the most successful studies by Thomson and Rubin (1996) and Kohler (2002) appear to have taught with more of an emphasis on metacognitive strategies (Macaro, Graham, and Vanderplank 2007).

Speaking

Speaking strategies, commonly referred to as *communication strategies*, began to pique the interest of scholars as early as the 1970s (Nakatani and Goh 2007). However, there is little agreement about what CSs really are, their transferability from L1 to L2, and their teachability in the classroom. Regarding researcher insights on CS, there are two major perspectives: interactional and psycholinguistic. The interactional view describes how meaning is negotiated between language learners and their interlocutors (for example, Tarone 1980; Rost and Ross 1991; William, Inscoe, and Tasker 1997 as cited by Nakatani and Goh 2007) while the psycholinguistic view studies problem-solving behaviors arising from gaps in their lexical knowledge (for example Bialystok 1983; Poulisse 1990 as cited by Nakatani and Goh 2007). Nakatin and Goh (2007) review the literature which follows these two perspectives.

By listening to a transcribed conversation between a native speaker and a non-native speaker, Tarone (1978) presented the first conceptual framework for CSs that became influential in the field. She places the strategies into five categories: "intra-language based, inter-language based, appeal for assistance, mime, and avoidance." Faerch and Kasper (1983a, 1983b, 1984) took another direction by defining strategies as "planning and execution of speech production during oral communication." They explain that learners must not only cooperate with the interlocutors, they must also problem solve without co-operative help. They categorized CSs into achievement strategies and reduction strategies, the former including code switching, interlingual transfer, intralingual transfer, interlanguage (IL)-based strategies, cooperative strategies, and non-linguistic strategies, and the latter consisting of

using reduced systems to avoid producing non-fluent or incorrect utterances and function reduction to avoid a specific topic or giving up sending a message.

When researching negotiation of meaning, several researchers (for example, Long 1980, 1981, 1983; Pica and Doughty 1985; Varonis and Gass 1985; Doughty and Pica 1986 as cited by Nakatani and Goh 2007) discovered three signals: comprehension checks, confirmation checks, and clarification requests. Comprehension checks refer to when interlocutors ascertain whether or not the other party understood their utterances, confirmation checks occur when they evaluate their own understanding by repeating or paraphrasing their partner's utterance, and clarification checks are used when interlocutors ask for assistance to understand their partner's previous utterance. Nakatin and Goh (2007) conclude that negotiation has an impact on TL development and Css have a positive impact on learning. They note that while many studies have been conducted dealing with CSs and negotiation, few have been administered in the classroom; therefore, more classroom studies should be done.

Strategy instruction for speaking has been examined in many studies, beginning with O'Malley, Chamot, Stewner-Manzares, Russo, and Küpper (1985), who investigated the effectiveness of strategy instruction with seventy-five high school students. Using pre- and post-test audio-taped data, researchers concluded that strategy instruction had a significant positive effect on developing speaking skills when students delivered a monologue to an audience, though conversational performance was not tested. Dörnyei (1995) examined the teachability of CSs within the context of speaking strategy instruction with Hungarian high school EFL learners. He used three types of oral strategies: topic avoidance, circumlocution,

and fillers and hesitation to remain in the conversation. The strategy instruction group showed significant improvement in strategy use and speech performance. Other instruction studies which also yielded successful results were conducted by Dadour and Robins (1996), Bejarano, Levine, Olshtain, and Steiner (1997), and Nakatini (2005), though one study (Cohen, Weaver, and Li 1998) using only metacognitive strategies found no significant difference in two out of the three tests administered. The authors concluded overall that instruction in CS produces positive results for learners.

The psycholinguistic view is associated with the ways that the learner makes up for a lack of lexical knowledge when they engage in communicative tasks. These strategies are commonly referred to as compensation strategies. Poulisse (1987) distinguished two basic strategy types: conceptual or holistic and analytic strategies and linguistic or transfer and morphological creativity. Bialystok (1983) conducted a study in which a distinction was made between L1-based strategies (language switch, foreignizing, and transliteration) and L2-based strategies (semantic contiguity; description: general physical properties, specific features, and interactional/functional characteristics; and word coinage). Of the two groups tested (14 adult civil servants and 16 grade 12 high school students) researchers found that LI strategies were used least by grade 12 advanced learners. Bongaerts and Pouliss (1989) studied a group of Dutch English learners who described unconventional shapes in Dutch and English. They employed two types of strategies: describing either holistic or segmental features of the shapes. In more than seventy percent of the cases, in both L1 and L2 referential communication participants used holistic strategies. Their use of analytic conceptual strategies revealed how important they were for closing lexical gaps. Fakhri (1984) conducted

a case study of strategy use in narrative construction by a female learner of Moroccan Arabic. He concluded that CS use was not random but rather constrained by text features. Fakhri documented five CS uses: circumlocution, lexical borrowing, elicitation of vocabulary, use of formulaic expressions, and morphosyntactic innovation. Paribakht (1985) tested the relationship of proficiency and CS use by examining a group of Persian ESL learners in Canada who were asked to describe twenty lexical items in a concept-identification task. Paribakht found that the use of CS was constrained by the concept type being communicated. Native speakers were reported to have used more strategies from the linguistic approach (for example, semantic contiguity, circumlocution, and metalinguistic clues) while intermediate learners used more contextual strategies (target language idioms, transliteration, and idiomatic transfer).

There have been few studies which examine CS instruction's relationship with the use of cognitive CSs. Rossiter (2003) investigated whether CS instruction could lead to greater use of CS and improved oral performance. Instruction included techniques such as approximation, superordination, analogy, using and all-purpose word, and different ways of carrying out circumlocution. The tests consisted of picture story narratives and object descriptions. No significant differences were found between groups in the use of strategy tokens in both tasks; however, the treatment group used significantly more strategy types in the object description task. The researcher concluded that paraphrase was not necessarily useful for narrative tasks and that CS use might be transferable from the L1 to the L2.

Cohen (2005) developed a taxonomy for learning, using, and evaluating the use of speech acts. Sources for the taxonomy included the general strategy literature, speech act

literature, and empirical research of L2 speech acts from a strategies-based online curriculum (Cohen & Ishihara, 2005). The first speech act strategy in Cohen's taxonomy involves taking practical steps to gain knowledge about specific speech acts by using criteria such as their frequency of use, their high-stakes value, and their special role within society, such as creating solidarity. The next is asking native-speakers to model performance of speech acts that might be used under differing conditions with the goal of seeing if there is variation according to the magnitude or seriousness of the situation, the relative age of the speaker and addressee, the relative status of the speaker and addressee, the relative roles of the speaker and addressee, and the length of acquaintance of the addressee. The second section in Cohen's taxonomy is a list of speech act use strategies. These strategies include practicing those aspects of speech acts that have been learned by engaging in imaginary interactions, engaging in role play with fellow learners or native speakers, engaging in "real play" with native speakers in the speech community, and engaging in interactions with native speakers without them knowing that the learners' purpose is to practice speech acts. Metapragmatic considerations learners make when learning or using speech acts are also part of the tactical schema. Under this category, the learner should decide how much pre-planning to do beforehand, as well as the level of monitoring during delivery of the speech act and the evaluation that will occur afterwards. The learner may monitor: the appropriateness of the chosen level of directness, the term of address, and the timing of the speech act as well as how the discourse is organized and the sociopragmatic appropriateness of selected semantic formulas.

Writing

Research conducted on writing strategies has diverged into two lines of research: a learner-internal perspective (Whalen 1993; Khaldieh 2003) and a socio-cognitive stance (Leki, 1995; Riazi 1997; Spack 1997; Cumming et al. 2002; Yang, Baba, and Cumming 2004). The former refers to techniques used to perform the writing task and the latter involves the actions carried out by L2 writers in response to the demands encountered by the discourse community in which they write. The learner-internal perspective has produced taxonomies that include macro-writing processes such as planning, writing, and revision, and subgroups under these categories, such as organizing, rehearsing, and evaluating. The socio-cognitive research trend has focused more on socio-cognitive views of literary development and goal theories in educational psychology. An example of strategies defined under this point of view can be seen in Cumming et. al. (2002). Strategies were identified under five headings: seeking assistance from other people (peers, teachers, tutors, relatives, friends), self-regulation (outlining, planning, editing, revising), stimulation (playing music or talking to people), use of tools (books, magazines, computers, dictionaries, and newspapers), and language practice.

In an analysis of the corpus of literature on writing strategies, Manchón, Larios, and Murphy (2007) found that switching to the L1 was by far the strategy most characteristic of L2 writing and present in planning, writing, and revising. Manchón, Larios, and Murphy note that the influence of instruction on strategy use is an under-researched area. The research conducted, however, indicates a positive influence of instruction on writers' approach to task and confidence as well as the quality of the compositions produced.

Bloom (2008) merges the strategy taxonomies of O'Malley and Chamot (1990) and Flowers' and Hayes' (1981) process approach of planning, translating, and reviewing to give advice about strategies used particularly for writing. Bloom suggests employing three strategies in pre-writing. The first is resourcing or using reference material as a model for a writing task. Analyzing the model can be extremely useful to L2 writers who can ascertain the purpose, the organization, the interaction between the writer and the reader, and certain linguistic features present that can be emulated in their own writing. The second is elaboration. O'Malley and Chamot (1990) define elaboration as "relating information to prior knowledge." Learners can operationalize this strategy by creating a KWL (know, want to know, learned) chart. Essentially, they can write everything they know about the topic, questions about what they learn, and then answers to those questions from research they have conducted to help them access background knowledge and set clear learning objectives. The third strategy is grouping which involves classifying material based on common characteristics. One way to present this graphically is with a semantic map, or a depiction of ideas with lines connecting them to indicate their relationship.

Bloom then suggests three strategies to employ during the actual writing process: rereading, substitution, and strategic use of the L1. Rereading promotes attention to content which is more characteristic of skilled writing (Raimes, 1987; Sasaki 2000). A writer can also reread source material to gain more dominion of language use or simply to attend to the gist of their own writing. Substitution refers to choosing a revised plan or different wording to solve problems in the writing process. Learners can use this to produce alternative ideas or language by creating tentative semantic maps or outlines and developing a list of different

phrasings for the same idea. They can also choose to revisit their maps during the revision process rather than during the writing process. L1 words or phrases can aid in translation or thinking through the writing process. The use of the L1 may also facilitate writing fluency if L1 words are used as place holders in the text. The writer may return to the phrase by using resourcing or substitution to solve the writing problem. Independent learners may also benefit by generating alternative ideas in the L1 before returning to the L2 composition. Learners must be cautioned, however, of overusing the L1 because it may stilt fluency, organization, and complexity (Chelala, 1982; Cohen & Brooks-Carson, 2001; Sasaki, 2000 as cited by Bloom, 2008).

According to Bloom, revising encompasses attention to content and linguistic form. Content can be examined by checking for purpose, main idea, interest, organization, and logic. Linguistic form can be revised by using guided proofreading, resourcing, and recombining. Rereading can help to solve mechanical and grammatical issues, resourcing can aid in explaining grammatical rules or information on vocabulary, and recombining is constructing longer syntactical phrases by putting together known elements in creative ways and experimenting with different connectors.

Conclusion

Language Learning Strategies have been both championed and criticized by scholars in the field of second language acquisition. While some enthusiastic scholars have taken a systematic approach to defining and enumerating strategies, others have considered strategies to be ad hoc and miscellaneous. In this concluding statement, this reviewer will attempt to analyze and critique both sides of the debate.

The definition of language learning strategies has been a subject of disagreement among researchers for many years. With this in mind, Ellis's conclusion that strategies can be considered conscious thoughts and behaviors clarifies the definition to be useful to future researchers. It also allows for strategies researchers to assert that while most learner characteristics are not malleable, language strategies may be, if they are consciously utilized. White agrees that strategies are conscious, and Wenden partially agrees by saying that they are either conscious or automatized. In this author's opinion, conscious strategies are more interesting because they could possibly be influenced by intervention. I also agree with Ellis that conscious strategies can only be observable in the declarative phase because if they are automatized, they become unconscious, and difficult to distinguish either from using a think aloud protocol or from observance by an outside party.

Regarding the history of LLS research, Rubin's (1975) and Stern's (1983) strategies of the "Good Language Learner" are good theoretical starting points, though their generality and unempirical nature makes them somewhat questionable. For example, it is difficult to interpret Stern's meaning when she includes "technical know-how in learning a language" as

an individual strategy without actually asking students what technical know how they use to learn a language. This gap has been addressed by both Oxford (1990) and O'Malley and Chamot (1990) with their extensive and organized taxonomies. I was at first skeptical that their taxonomies could be comprehensive enough to be deemed appropriate for use in further empirical studies. This skepticism originated from my reading of criticism from researchers like LoCastro (1994) who claim that some strategies are either omitted from the taxonomies or not used by people from different cultures. One way to address this criticism and a suggestion for future research would be to have participants of empirical studies add strategies they do not find in the taxonomies in order to further devise a larger list of strategies to include in the taxonomy. Also adding a questionnaire designed from the strategies used for four specific skills to Oxford's SILL would further expand the empirical research already conducted. LoCastro also claims that learners learn strategies based on cultural norms or context and therefore, ethnographic research is more appropriate than quantitative studies conducted with the SILL. One way of addressing this issue might be to add an ethnographic component to a SILL study by giving an open ended interview about both learning in the classroom and learning outside of the classroom. This would be a qualitative approach that may give a more complete picture after adding it to the SILL component. Sparks and Granshow's criticism that teaching lower learners is counterproductive could also be addressed by teaching strategies to every student. Motivated and high achieving language learners could benefit from strategies instruction as much as lower achieving learners by adding new strategies they have not considered to their repertoire. I also respectfully disagree with Dörnyei's criticism of strategies research because I think that a strategy can contribute to both linguistic knowledge and language skills and it can be emotional, behavioral, and thought based at the same time. It is

my belief that these attributes and actions are inextricably related because linguistic knowledge benefits language skills and one can think, feel, and act all simultaneously after stimulation from only one source.

Among all of the links between strategies use and other variables researched, motivation appears to have the greatest degree of relation. One interesting angle for further research could be analyzing the relation of strategies and intrinsic motivation versus their relation to instrumental motivation. It could be that one of the reasons there is a difference in strategy use among sexes in different cultures is that the men are more motivated for instrumental reasons whereas there are less instrumental reasons to study a foreign language in other countries, especially if they are English speaking. Likewise, if humanities majors are most likely to use strategies, it may be because they are motivated to do so in order to get better grades in more classes at a greater difficulty level than those in the technology field.

Though there have been mixed results that indicate the relationship between strategy use and proficiency, it appears to me that the research in favor of the relationship is more convincing than that which is not. Even one of the studies that had more negative results still found a weak relation between strategies and proficiency. Another discovered the importance of metacognitive strategies in relation to TOEFL scores. Future research should examine ways of measuring proficiency other than the TOEFL in order to ascertain different kinds of relationships between strategies and proficiency.

Task-based strategy research is an interesting avenue to explore because it addresses the criticism that strategy use is based on contextual cues and therefore cannot be adequately

described by an instrument like the SILL. If one could find a way to mimic naturalistic settings in the classroom, like, for instance using circumlocution as a means to practice communicating in the L2, by pairing it with a task like learning new vocabulary, an interesting study would materialize. One could determine whether or not an intervention like this one would either benefit communicative proficiency or a higher level of vocabulary knowledge.

Studies on L2 reading strategies indicate that "main meaning" strategies are used more often by successful readers than by unsuccessful readers. It seems as if successful readers use a more top-down approach than bottom-up by skipping words they do not know or inferring meaning, and looking more for the gist of the text as a whole. Perhaps one could conduct a Strategy Based Instruction study on teaching the skipping and inferring of words and identifying main ideas to a class to discover whether or not this would improve the reading test scores of those who are less successful. Kusiak's (2001) study on the affect of SBI with metacognitive strategies was quite successful. A replication of this study in FL settings in the US or in other venues besides ESL in Poland would help determine if metacognitive and monitoring strategies are teachable universally. Moreover, teachers might be interested in knowing which metacognitive strategies were taught in the program in order to emulate the teaching methods in their own classrooms.

Metacognitive strategies also appear to be effective in listening comprehension. Vandergrift's (2003) study investigating the metacognitive strategies of students who participated in listening activities was reported as a successful intervention study. Teaching students how to predict, problem solve, monitor, and evaluate seemed to have helped them with their direct and selective attention to the text allowing them a greater degree of success

and confidence in their listening skills. The successful SBI studies in listening comprehension share the common thread of teaching metacognitive strategies. One avenue for future research might be testing metacognitive strategy instruction versus cognitive strategy instruction. I hypothesize that metacognitive strategies may be easier to remember and therefore more user-friendly for L2 learners.

The interactional and psycholinguistic approaches to communication strategies are an interesting theoretical starting point for defining speaking in an L2. Interactional SBI has been found to be successful at helping students achieve more spoken fluency, so teachers should train in SBI especially for speaking skills. Dörnyei's study that taught students topic avoidance, circumlocution, and using fillers seemed to improve speaking ability, so that would be a good starting point for teachers. Achievement and reduction strategies in particular are good way to classify speaking strategies because they can be used for further studies examining speaking strategies and proficiency. The fact that more advanced speakers used more achievement strategies than reduction strategies suggests that achievement strategies enable a higher level of communication. An interesting SBI study to test this hypothesis would be to try teaching achievement strategies to lower proficiency speakers to determine if this helps them speak more fluently.

Regarding writing strategies, the research has shown that instruction of strategies for writing can enhance writing abilities for L2 learners. More research should be conducted to increase the amount of investigation in the currently small corpus. An interesting SBI study could take Bloom's macro-strategies of pre-writing, writing, and revision and the micro-strategies he suggests under each category and teach them to a L2 language class, while also

providing them excellent material for resourcing. Then one could compare a treatment group with a control group to determine the degree in which Bloom's melding of O'Malley and Chamot's and Flower and Hayes' strategies would benefit.

The purpose of this report was to collect a wide variety of data from many researchers to give a clear picture of what language learning strategy research has looked like over the last thirty years. It also sought to answer questions for students, teachers, and future researchers about what a language strategy is, what language learning strategies have been documented, how language learning strategies relate to other variables, and what language learning strategies are specific to the four language skills. It should be evident from the research reported here that there is no clear-cut answer to any of these questions; however, the research has continuously evolved and has the potential of developing more specific answers over time. There has been an exhaustive delineation of strategies discussed by researchers; the next steps are to develop a consensus about the definition of a strategy, collect more data on the quality of strategy use and create more convincing evidence that strategy instruction benefits learners. Although these seem like difficult to reach objectives, with effort from researchers, they are realistic goals. Hopefully this report will be a starting point for those who wish to take these goals to the next level to help bridge the gap between what we know and what we would like to know about language learning strategies.

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